

SUGGESTED REMARKS

SPACE SCIENCE BOARD MEETING

SNOWMASS, COLORADO

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JULY 27, 1982

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THANK YOU, AND GOOD MORNING EVERYONE.

I AM DELIGHTED TO BE HERE TODAY AND LOOK FORWARD TO SHARING THOUGHTS WITH YOU FOLLOWING THIS TALK, ON THE FUTURE OF SCIENCE MISSIONS IN SPACE.

FOR MANY YEARS THIS BOARD'S ADVICE AND ASSISTANCE IN PLANNING NASA'S IMPORTANT SPACE SCIENCE ENDEAVORS HAS BEEN INVALUABLE. HEAO, THE VOYAGERS, THE SOLAR MAXIMUM MISSION AND COUNTLESS OTHER PROJECTS, WOULD PROBABLY NEVER HAVE BECOME REALITIES WITHOUT YOUR HELP. YOUR WORK HAS BUILT A STRONG SCIENTIFIC FOUNDATION FOR THE NATION'S SPACE PROGRAM AND NASA, THE NATION AND, INDEED, SCIENTISTS THROUGHOUT THE WORLD ARE PROUD OF YOUR CONTRIBUTIONS.

WE ARE PROUD, TOO, THAT NASA IS CONTINUING THE TRADITION OF IMPORTANT SCIENTIFIC INQUIRY YOU HAVE HELPED TO ESTABLISH.

WE LOOK FORWARD WITH GREAT EXCITEMENT TO THE LAUNCH AT THE END OF THE YEAR OF THE INFRARED ASTRONOMY SATELLITE AND TO A SUCCESSION OF MAJOR PROJECTS THROUGH THE DECADE: SPACE TELESCOPE, GALILEO MISSION TO JUPITER, THE INTERNATIONAL SOLAR POLAR MISSION AND THE GAMMA RAY OBSERVATORY. WE ARE PARTICULARLY EXCITED ABOUT COBE - THE COSMIC BACKGROUND EXPLORER TO BE LAUNCHED IN 1989. I AM PLEASED TO TELL YOU I HAVE JUST APPROVED THE INITIATION OF THIS PROJECT WHICH WILL GIVE US NEW INSIGHTS INTO THE NATURE OF THE "BIG BANG" AND THE EARLIEST HISTORY OF THE UNIVERSE.

YOU MAY BE INTERESTED TO KNOW, TOO, THAT WE ARE TAKING A NEW STEP TO STRUCTURE AND FOCUS OUR EFFORTS IN EARTH SCIENCE.

WE PLAN TO BEGIN AN EXCITING TEN-YEAR INTERNATIONAL COOPERATIVE RESEARCH PROGRAM WE CALL GLOBAL HABITABILITY. FROM IT WE HOPE TO LEARN HOW BOTH MAN-MADE AND NATURAL CHANGES AFFECT THE HABITABILITY OF THE EARTH. THE PROGRAM WILL FOCUS ON BIOLOGICAL PRODUCTIVITY AND THE WATER, CHEMICAL AND ENERGY CYCLES WHICH ARE CRUCIAL TO THE MAINTENANCE OF THE EARTH'S LIFE SUPPORT SYSTEMS.

THIS WILL BE THE FIRST COMPREHENSIVE STUDY OF ITS KIND ALTHOUGH MUCH OF THE REQUIRED EFFORT IS ALREADY UNDERWAY OR PLANNED IN NASA, OTHER GOVERNMENT AGENCIES AND THE INTERNATIONAL COMMUNITY. IT WILL BE AN INTERDISCIPLINARY PROGRAM OF BROAD CONTENT AND SCOPE IN WHICH PHYSICAL, CHEMICAL AND BIOLOGICAL PROCESSES OF THE OCEAN, ATMOSPHERE AND BIOSPHERE WILL BE ASSESSED, FIRST TO ISOLATE NATURAL VARIABILITY, AND THEN TO STUDY THE IMPACT OF MAN-MADE CHANGES ON THE GLOBAL SYSTEM.

AS YOU MAY IMAGINE, THE PROGRAM IS CENTERED AROUND SPACE OBSERVATIONS REQUIRED TO PROVIDE GLOBAL PERSPECTIVE. IT WILL INVOLVE INTENSIVE STUDIES OF THE LAND, THE OCEANS, THE ATMOSPHERE AND THE BIOSPHERE WITH EMPHASIS ON THE INTERACTION BETWEEN THESE UNIQUE SYSTEMS. IT WILL BE A TRUE STUDY OF THE EARTH AS A SYSTEM USING THE TYPE OF PERSPECTIVE WE HAVE GAINED FROM OUR PLANETARY PROGRAM.

WE PLAN TO ANNOUNCE THE PROGRAM AT THE UNISPACE 82 CONFERENCE IN VIENNA NEXT MONTH AND WILL INVITE OTHER NATIONS TO JOIN US IN THE EFFORT, WHICH WE EXPECT WILL BE OF GREAT BENEFIT TO ALL OF MANKIND.

AS MANY OF YOU MAY KNOW, FOR MORE THAN A YEAR NOW, IN FACT, SINCE MY CONFIRMATION HEARING BEFORE THE SENATE, I HAVE BEEN SAYING THAT OUR NEXT LOGICAL STEP SHOULD BE TO BUILD A SPACE STATION TO PROVIDE A PERMANENT MANNED PRESENCE IN ORBIT. I HAVE DISCUSSED THIS WITHIN THE ADMINISTRATION AND WAS ENCOURAGED BY THE PRESIDENT'S REMARKS ON JULY 4TH WHEN, AS HE WELCOMED HOME STS-4, HE SAID, "WE MUST LOOK AGGRESSIVELY TO THE FUTURE BY DEMONSTRATING THE POTENTIAL OF THE SHUTTLE AND ESTABLISHING A MORE PERMANENT PRESENCE IN SPACE."

FOR OUR PART THEN, THE QUESTION IS NOT WHETHER WE WILL BUILD A SPACE STATION. THERE CAN BE NO DOUBT THAT WE WILL. RATHER THE QUESTION IS: WHEN WILL WE BEGIN?

WE ARE EVALUATING THIS QUESTION OF TIMING NOW IN THE LIGHT OF CONGRESSIONAL DETERMINATION TO KEEP NASA'S BUDGET WITHIN THE PRESIDENT'S REQUESTED DOLLAR AMOUNT, AND THE STATE OF THE ECONOMY. UNDER ANY CIRCUMSTANCES, WE PLAN TO MOVE FORWARD IN OUR PLANNING AND DEFINITION ACTIVITY IN FY '84.

THE PLAIN FACT IS THAT WE ARE NOT IN CONTROL OF THE SITUATION NOW. WE MUST LET EVENTS UNFOLD TO KNOW PRECISELY WHERE WE STAND.

MEANWHILE, WE ARE BEGINNING TO BUILD THE NECESSARY CONCEPTUAL FOUNDATION THAT WOULD UNDERLY THIS EFFORT. WE EXPECT TO HAVE SOME MISSION ANALYSIS STUDIES READY THIS SPRING. THESE STUDIES WILL HELP TO DEFINE WITH PRECISION WHAT SCIENCE, COMMERCIAL AND DEFENSE PROJECTS CAN BEST BE UNDERTAKEN IN A SPACE STATION. WE HAVE ALSO ESTABLISHED A SPECIAL STEERING COMMITTEE TO DEFINE WHAT TECHNOLOGIES ARE REQUIRED TO SUPPORT A PERMANENT FACILITY.

I HAVE GIVEN YOU THIS BACKGROUND TO ILLUSTRATE THAT WE ARE DEAD SERIOUS IN OUR DETERMINATION TO CONTINUE TO CONVINCE THE ADMINISTRATION OF THE IMPORTANCE OF BUILDING A PERMANENT MANNED FACILITY IN SPACE, PERHAPS WITH CONTRIBUTIONS FROM OUR INTERNATIONAL PARTNERS.

BUT EQUALLY IMPORTANT IS THE WORK--THE SPACE STATION STUDY--WE HAVE ASKED YOU TO CONDUCT. THIS IS BECAUSE AT THIS POINT WE DO NOT KNOW WHAT THE SPACE STATION WILL LOOK LIKE; BUT WE KNOW WHAT IT SHOULD DO. IT SHOULD HELP US CONTINUE TO FULFILL OUR CONGRESSIONAL MANDATE FOR THE PEACEFUL USES OF SPACE, TO EXPAND HUMAN KNOWLEDGE OF PHENOMENA IN THE ATMOSPHERE AND IN SPACE AND TO APPLY WHAT WE LEARN TO IMPROVE OUR LIFE ON EARTH.

IN ORDER TO DO THIS IT IS ESSENTIAL THAT THE SCIENTIFIC USES OF A SPACE STATION BE BUILT INTO OUR PLANNING RIGHT FROM THE BEGINNING. WE WANT TO KNOW WHAT WAYS AND TO WHAT EXTENT A SPACE STATION WILL HELP SCIENCE MISSIONS. WE WOULD LIKE YOU TO LOOK AT WHAT SCIENCE MISSIONS CAN BEST BE ACCOMPLISHED IN SPACE - BY PEOPLE IN A STATION OR AN UNMANNED PLATFORM IN CONJUNCTION WITH THE STATION - HOW MAN'S PRESENCE CAN BE USED TO ASSEMBLE STRUCTURES IN ORBIT AND TO REPAIR AND SERVICE MISSIONS IN SPACE.

I CAN ASSURE YOU THAT WHEN WE GET THE SPACE STATION OFF THE GROUND, IT WILL NOT BE ANOTHER MANNED SPACE FLIGHT DEMONSTRATION PROGRAM. RATHER, WE SEE IT AS A MEANS TO DEVELOP A CAPABILITY TO OPERATE ROUTINELY AND EFFECTIVELY IN SPACE AND TO PROVIDE CONTINUITY AND FOCUS TO OUR CIVILIAN SPACE PROGRAM, AND, IN PARTICULAR, TO ITS SCIENCE AND APPLICATIONS COMPONENT.

WITH THE SPACE STATION WE HAVE AN UNRIVALED TOOL FOR THE PRACTICAL AND SCIENTIFIC USES OF SPACE. WE WOULD HAVE A STABLE, MANNED PLATFORM FOR SCIENTIFIC EXPERIMENTS, SPECIFICALLY FOR THOSE IN ASTRONOMY, LIFE SCIENCES AND PHYSICS, IN ADDITION TO AN EXTENSIVE VARIETY OF OTHER SPACE-BASED OPERATIONS. AND WITH YOUR CONTRIBUTIONS WE HOPE TO BE ABLE TO PLAN FOR AND BUILD IN THE APPROPRIATE INSTRUMENTS AND CONFIGURATIONS FOR SCIENTIFIC ENDEAVORS.

THERE IS NO DOUBT THAT FOREIGN INVOLVEMENT IN THE DEVELOPMENT OF A UNITED STATES SPACE STATION WOULD OFFER NUMEROUS BENEFITS FOR US AND FOR OUR PARTNERS.

INDEED, JAPAN AND THE EUROPEAN SPACE AGENCY HAVE EACH AGREED TO BEGIN STUDIES ON WHAT THEY COULD CONTRIBUTE TO A SPACE STATION EFFORT. AND WHEN WE HAVE COMPLETED OUR INITIAL STUDIES WE INTEND TO EXCHANGE INFORMATION WITH THEM.

SUCH A COOPERATIVE EFFORT WOULD REDUCE OUR COSTS AND COULD PERMIT US TO DEVELOP A MORE EXPANSIVE EFFORT. FURTHERMORE THE INVOLVEMENT OF FOREIGN NATIONS COULD ADD A DEGREE OF STABILITY TO THE PROGRAM, WHICH, DESPITE OUR EXPERIENCE WITH ISPM, I FIRMLY BELIEVE COULD HELP TO SUSTAIN ITS POLITICAL SUPPORT AND FUNDING DURING THE CRUCIAL DEVELOPMENTAL PHASE. MOREOVER, FOREIGN PARTICIPATION WOULD CONTINUE TO LINK OTHER COUNTRIES' SPACE PROGRAMS TO THE SHUTTLE, THUS STRENGTHENING THE STS AND DIVERTING INVESTMENTS FROM COMPETING SYSTEMS. OTHER ADVANTAGES WOULD ACCRUE TO BOTH THE UNITED STATES AND ITS PARTNERS FROM ACCESS TO EACH OTHERS' SCIENCE AND TECHNOLOGY. AND, OF COURSE, THERE WOULD BE STRENGTHENING OF ALREADY-EXISTING SCIENTIFIC POLITICAL AND STRATEGIC TIES.



BUT INTERNATIONAL INVOLVEMENT IN A SPACE STATION'S DEVELOPMENT IS FAR FROM ASSURED AT THIS STAGE. MUCH DEPENDS ON WHETHER OUR POTENTIAL PARTNERS PERCEIVE THE BENEFITS TO BE DERIVED AS EQUAL TO THEIR POTENTIAL CONTRIBUTIONS. I BELIEVE THAT IF WE ARE TO CONVINCE OTHER NATIONS TO JOIN WITH US IN THIS VENTURE, WE MUST MAKE IT CLEAR TO THEM AT THE OUTSET THAT THEY WILL BE FULL PARTNERS, NOT JUNIOR PARTNERS, WITH ALL THAT SUCH AN ARRANGEMENT ENTAILS. THIS MEANS THAT IF A FOREIGN GOVERNMENT MAKES A LARGE INVESTMENT, THAT INVESTMENT MUST LEAD TO EQUALLY LARGE REWARDS IN DIRECT AND SPIN-OFF BENEFITS.

FOR NOW, AS WE BEGIN TO PLAN TOWARDS OUR NEXT GREAT GOAL IN SPACE, I BELIEVE WE CANNOT AFFORD TO FORECLOSE INTERNATIONAL INVOLVEMENT. FOR THE LONG TERM, THE HUMAN RACE HAS TOO MUCH TO GAIN BY SUCH COOPERATION. SIMILARLY WE MUST HAVE THE INVOLVEMENT OF THE SCIENTIFIC COMMUNITY IN SPACE STATION PLANNING RIGHT FROM THE BEGINNING. THE STAKES ARE TOO HIGH AND THE POTENTIAL BENEFITS TOO GREAT TO THE NATION, TO NASA AND TO THE COMMUNITY ITSELF. THAT IS WHY THE SPACE STATION STUDY YOU ARE ABOUT TO UNDERTAKE IS OF UTMOST IMPORTANCE.

ALFRED NORTH WHITEHEAD ONCE WROTE THAT "MODERN SCIENCE HAS IMPOSED ON HUMANITY THE NECESSITY FOR WANDERING." THE TRUTH IS THAT THIS NECESSITY, WHICH I PREFER TO CALL THE URGE TO KNOW THE UNKNOWN, IS AS OLD AS CIVILIZATION ITSELF. IT IS THE HALLMARK OF EVERY GREAT NATION, AND THE FUNDAMENTAL CORE OF SCIENCE, THE ARTS AND THE HUMANITIES.

THAT IS WHY I AM CONFIDENT THAT WE WILL CONTINUE THE GREAT ADVENTURE OF SPACE EXPLORATION ON WHICH WE HAVE EMBARKED.

THIS NATION HAS NEVER TURNED ITS BACK ON CHALLENGING ENDEAVORS. AND, PERHAPS, THIS IS WHAT MY FRIEND AND FAVORITE NEWSPAPER COLUMNIST, GEORGE WILL, HAD IN MIND WHEN HE WROTE RECENTLY:

"WE KNOW NEXT TO NOTHING ABOUT VIRTUALLY EVERYTHING. IT IS NOT NECESSARY TO KNOW THE ORIGIN OF THE UNIVERSE. IT IS ONLY NECESSARY TO WANT TO KNOW. CIVILIZATION DEPENDS NOT ON ANY PARTICULAR KNOWLEDGE, BUT ON THE DISPOSITION TO CRAVE KNOWLEDGE."

I BELIEVE THAT WE WILL CONTINUE TO CRAVE KNOWLEDGE, AND,  
WITH YOUR HELP, CONTINUE TO AMASS AND USE IT. AND BECAUSE OF  
THAT, OUR CIVILIZATION WILL CONTINUE TO GROW AND PROSPER.

THANK YOU VERY MUCH.

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